

User's Guide

Value Series

Model VS375C, VS575C

For your records

The serial number of your UPS is on the rear panel. You should note the serial number in the space provided below. Retain this booklet as a permanent record of your purchase to aid in identification in the event of theft or loss.

Model No:

Serial No.:

Purchase Date:

LIMITED WARRANTY

What the warranty covers:

We warrant this product to be free from defects in material and workmanship during the warranty period. If a product proves to be defective in material or workmanship during the warranty period, we will at our sole option repair or replace the product with a like product.

How long the warranty is effective:

For accurate warranty period and conditions, please contact local branch offices or your dealers.

Who the warranty protects:

This warranty is valid only for the first consumer purchaser.

What the warranty does not cover:

1. Any product on which the serial number has been defaced, modified or removed.
2. Damage, deterioration or malfunction resulting from:
 - a) Accident, misuse, neglect, fire, water, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
 - b) Repair or attempted repair by anyone not authorized.
 - c) The fault is result of accidental damage or damage in transit or transportation, including but not limited to liquid spillage.
 - d) Removal or installation of the product.
 - e) Causes external to the product.
 - f) Use of supplies or parts not meeting our specifications.
 - g) Normal wear and tear.
 - h) Any other cause which does not relate to a product defect.
3. Removal, installation and set-up service charges.

Limitation of implied warranties:

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Exclusion of damages:

OUR LIABILITY IS LIMITED TO THE COST OF REPAIR OR REPLACEMENT OF THE PRODUCT. WE SHALL NOT BE LIABLE FOR:

1. DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN THE PRODUCT*, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, LOSS OF PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF GOODWILL, LOSS OF DATA, LOSS OF SOFTWARE, COSTS OF SUBSTITUTE EQUIPMENT, INTERFERENCE WITH BUSINESS RELATIONSHIPS, CLAIMS BY THIRD PARTIES, OR OTHER COMMERCIAL LOSS, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.
2. ANY OTHER DAMAGES, WHETHER INCIDENTAL, CONSEQUENTIAL OR OTHERWISE.
3. ANY CLAIM AGAINST THE CUSTOMER BY ANY OTHER PARTY.

Effect of state law (for US):

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow limitations on implied warranties and/or do not allow the exclusion of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

Limitations of Warranty (for Australian States and Territories)

The Trade Practices Act 1974 and corresponding State and Territory Fair Trading Acts or legalization of another Government ("the relevant acts") in certain circumstances imply mandatory conditions and warranties which cannot be excluded. This warranty is in addition to and not in replacement for such conditions and warranties. To the extent permitted by the Relevant Acts, in relation to your product and any other materials provided with the product ("the Goods") the liability of Opti Australia under the Relevant Acts is limited, at the option of Opti Australia to:

- Replacement of the Goods; or
- Repair of the Goods; or
- Payment of the cost of replacing the Goods; or
- Payment of the cost of having the Goods repaired.

Opti Australia reserves the right to request proof of purchase upon any warranty claim.

Life Support:

We do not recommend the use of our UPS products for life support equipment or direct care where failure of a UPS product could cause failure of, or diminished effectiveness of the life support equipment or patient care.

*Except as expressly provided for by the UPS "Equipment Protection Policy"

EFFECTIVE October 1, 1997

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS



**THIS MANUAL CONTAINS IMPORTANT SAFETY INSTRUCTIONS.
KEEP THIS MANUAL HANDY FOR REFERENCE.**

- ♦ CAUTION: A BATTERY CAN PRESENT A RISK OF ELECTRICAL SHOCK, BURNS FROM HIGH SHORT-CIRCUIT CURRENT, FIRE OR EXPLOSION FROM VENTED GASES. OBSERVE PROPER PRECAUTIONS.
- ♦ WHEN REPLACING BATTERIES, USE THE SAME NUMBER AND THE FOLLOWING TYPE BATTERIES: SEALED LEAD-ACID MAINTENANCE FREE (VS375C: 1 X 3.5AH/12V; VS575C: 1 X 3.8AH/12V)
- ♦ PROPER DISPOSAL OF BATTERIES IS REQUIRED. REFER TO YOUR LOCAL CODES FOR DISPOSAL REQUIREMENTS.

. CAUTION:

THE UPS CONTAINS VOLTAGES WHICH ARE POTENTIALLY HAZARDOUS. ALL REPAIRS SHOULD BE PERFORMED BY QUALIFIED SERVICE PERSONNEL.

THE UPS HAS ITS OWN INTERNAL ENERGY SOURCE (BATTERY). THE OUTPUT RECEPTACLES MAY BE LIVE EVEN WHEN THE UPS IS NOT CONNECTED TO AN AC SUPPLY.

Safe and continuous operation of the UPS depends partially on the care taken by users. Please observe the following precautions.

- Do not disassemble the UPS.
- Do not attempt to power the UPS from any receptacle except a 2-pole 3-wire grounded receptacle.
- Do not place the UPS near water or in environments of excessive humidity.
- Do not allow liquid or any foreign objects to get inside the UPS.
- Do not block air vents on the side of the UPS.
- Do not plug appliances, such as hair dryers, into the UPS receptacles.
- Do not place the UPS under direct sunshine or close to heat-emitting sources.
- This UPS is intended for installation in a temperature controlled, indoor area free of conductive contaminants.
- The socket-outlet shall be installed near the UPS and easily accessible.
- With the installation of the UPS it should be prevented, that the sum of the leakage current of the UPS and the connected consumer exceeds 3.5mA.
- The battery supply should be disconnected in the plus and minus pole at the quick connectors of the battery when maintenance or service work inside the UPS is necessary.
- Do not dispose of batteries in a fire. The battery may explode.
- Do not open or mutilate the battery or batteries, released electrolyte is harmful to the skin and eyes.
- A battery can present a risk of electric shock and high short circuit current. The following precaution should be observed when working on batteries
 - * Remove watches, rings or other metal objects.
 - * Use tools with insulated handles.
- To reduce the risk of fire, connect only to a circuit provided with 20 amperes maximum branch circuit overcurrent protection in accordance with the National Electrical Code. ANSI/NFPA 70.

FEDERAL COMMUNICATIONS COMMISSION (FCC)

WARNING:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CANADIAN DEPARTMENT OF COMMUNICATIONS (DOC)

This equipment does not exceed Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications. Operation in a residential area may cause Unacceptable interference to radio and TV reception requiring the owner or operator to take whatever steps are necessary to correct the interference.

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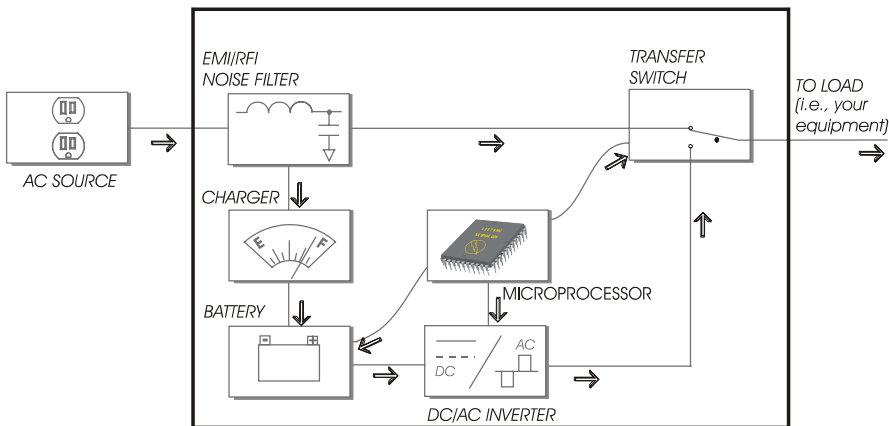
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1. INTRODUCTION

1.1 Overview

The Value Series of Uninterruptible Power Systems (*UPS*) was designed to prevent spikes, transients and blackouts from reaching your sensitive equipment. Your equipment may include such items as computers and computerized instruments to telecommunication systems. When AC power is present, the UPS filters the power continuously. When AC power fails, the unit employs its internal maintenance-free battery to supply back-up power without interruption.



Value Series Features

1.2 Frequency Auto Sensing

The VS models can operate in either a 50 or 60 Hz environment. When you plug the UPS into an AC outlet and turn it on, it will automatically detect the incoming line frequency and configure itself to match that frequency.

1.3 User Replaceable Battery Design

The battery is the most critical part in a UPS. The average lifetime of a battery is between 3 and 5 years. The special user-replaceable battery design of this UPS provides significant savings and gives the UPS an almost unlimited life. You can replace the battery very easily, and without turning off your UPS or the equipment it is protecting.

Many UPS's provide only a basic power failure warning. The Value Series, together with *OPTI-SAFE Xtreme* also provides you with important operating information. If *OPTI-SAFE Xtreme* is not part of your UPS package, you can purchase it from your local dealer.

1.4 Over Voltage and Under Voltage Protection

The UPS will switch to backup mode and provide the power from its internal battery when the input line voltage is too low or too high.

1.5 Schedule Shutdown & Startup

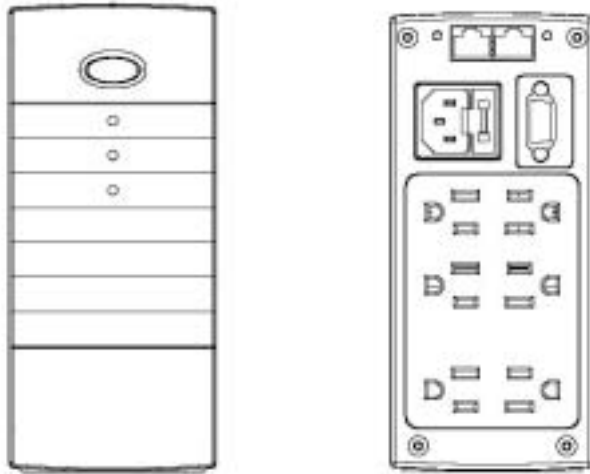
Using *OPTI-SAFE Xtreme* you can locally or remotely control the shutdown and startup of equipment connected to a UPS. A customized schedule can be developed to meet your specific requirements.

1.6 Data-Line Surge Protection

The built-in data-line surge suppression on the rear panel completes your system protection. It provides an easy way to protect a network (*RJ45*) or modem (single line phone) connection from hazardous spikes.

2. UPS CONTROLS

2.1 External Views



2.2 Power On/Off/Test/Silence Button:

The On/Off/Test/Silence Button has four functions:

1. When the UPS is off and AC power is present, press this button for more than 3 seconds to turn on the UPS. The UPS can be turned on even when AC power is not present.
2. When the UPS is on, press this button for more than 3 seconds to turn off the UPS and output power.
3. When the UPS is operating in "Battery" mode, you can silence the alarm by quickly pressing the power button. (This function is disabled when the UPS has a "LOW BATTERY" or "OVERLOAD" condition).
4. Quickly press the button while the UPS is under "AC" mode, and the UPS will perform an automatic self-test procedure.

* "No load shut down" function: As a battery saving feature, the UPS will automatically turn off if none of the connected equipment is operating while the UPS is in back-up mode. Once normal utility power returns, the unit will wake up automatically.

2.3 Status Indication

UPS Status Indication: Front Panel LED

AC Mode	When this Green LED is lit, the UPS is in normal mode, and providing power to your equipment. The UPS will continue to filter and provide surge protection.
Battery Mode	When this Yellow LED is lit, the UPS is providing power from its battery. Also, this LED is lit when you press the button to test the battery.
Battery Fault	This Red LED indicator indicates two statuses of the UPS: When this Red LED is on, it indicates that the battery needs to be replaced. When this Red LED is flashing rapidly, it indicates the UPS is over loaded .

2.4 Communication Port (Remote Port)

This port allows for a computer to monitor the status and control the operation of the UPS. Its functions include the following:

- ◆ To broadcast a warning when power fails.
- ◆ To close any open files before the battery reserves are exhausted.
- ◆ To turn off the UPS.

*Note that software and the communication cable are only available in certain areas. Contact your local dealer for more information.

2.5 Data Line Surge Protection (In & Out)

The data line surge protection on the rear panel provides an easy way to protect a network (RJ45) or modem(RJ11) connection from hazardous spikes. Connect a network cable or a single line telephone into the "In" socket. To complete the connection, connect another network cable or telephone line into the "Out" socket.

2.6 AC Input

Connect the AC power cord into the AC Input socket. UPS can have power from commercial electricity. It has a fuse in the socket to protect over current. The spare fuse also inside the socket for replacing.

2.7 Output outlet

There are two kinds function output outlets:

1. Bypass : These output outlets offer surge protection only. It won't have back up power at inverter mode.
2. UPS outlet : These output outlets not only offer surge protection but also back up power to your main equipments at inverter mode.

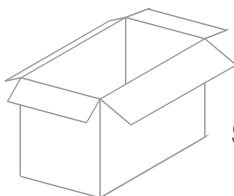
3. INSTALLATION AND OPERATION

Before installation, please read and understand the following instructions:

3.1 Unpacking and Inspection

Examine the packing carton for damage and accessory in the box. Notify the carrier immediately if damage is observed.

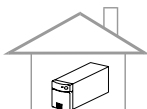
- * UPS *1
- * User Manual *1
- * Power Cord *1
- * CD-ROM *1
- * Communication Cable *1
- * Telephone Line *1



save the box

3.2 Placement

1. This unit is intended for indoor use only. Although your UPS is very rugged, its internal components are not sealed from the environment.
2. The UPS must be installed in a protected environment away from heat-emitting appliances such as heaters or radiators. Do not install this product where excessive moisture is present.



3. The location should provide adequate air flow around the UPS with one inch minimum clearance on all sides for proper ventilation.

3.3 Determining How Much Equipment You Can Connect to Your UPS

1. Make a list of all equipment that requires protection.
2. Each piece of equipment has voltage and current (VA) ratings printed on the back label (see examples below). Your equipment may have a voltage rating such as 88-264V. If you live in the United States you should use 120V in your calculations, since the standard voltage in the United States is 120V.

ViewSonic G810
120V 2.7A
50 / 60 Hz
SN: Q771515388

Computer Co
Pentium Pro 200MHz
120V 2.0A
50/60 Hz
SN: 123456

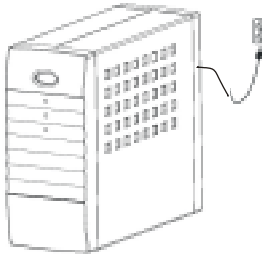
3. Multiply the voltage and current of each piece of equipment (*VA requirements*); for example, $120V \times 2.7A = 324VA$, $120V \times 2.0A = 240VA$.

Add up the VA requirements for **all the devices**; for example, $324VA + 240VA = 564VA$.

4. Make sure that your UPS has at least as much VA capacity as your equipment requires.

3.4 Powering Up Your UPS

1. For 100/110V/120V versions, connect the power cord to a grounded 3-wire receptacle. For 220V/230V/240V versions, please refer to Sec 3.5 .



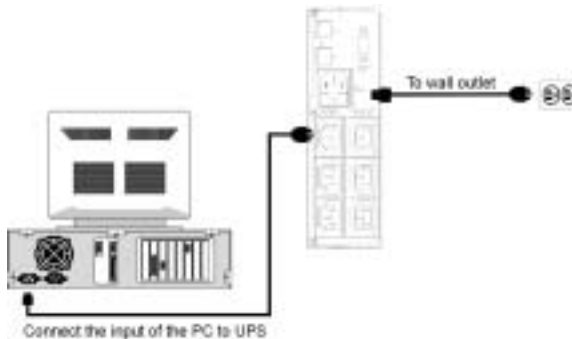
2. Power up the UPS by pressing the On/Off switch on the front panel for three seconds.
3. We recommend that you charge the battery for six (6) hours before first use of your UPS. **You may use the UPS immediately without charging the battery, but the backup time may be less than the rating. The UPS recharges the battery automatically whenever AC power is available.**

3.5 Connecting Your Equipment to the UPS

1. For all UPS models except the 2x0V versions: connect the power cord(s) of your computer equipment to the output receptacle(s) of the UPS. Switch on the computer equipment.
2. For 2x0V versions, as shown in the illustration below: connect the input power cord of your computer equipment to the inlet of the UPS and the wall socket. Use the power cord supplied with the UPS to connect from the outlet of the UPS to your equipment. Switch on the computer



3. **DO NOT PLUG LASER PRINTERS INTO THE UPS BECAUSE THEY TYPICALLY DRAW TOO MUCH POWER**



3.6 Operation and Function Test

1. Connect the input power and turn on the UPS. The front panel Normal Mode LED will light.
2. The UPS may be overloaded if the UPS buzzer sounds continuously and the Battery Fault LED **flashes**. Unplug the least critical devices, such as a printer, etc. If the buzzer is still sounding, the battery or UPS may be faulty. Contact your local dealer for assistance.

Note: *Backup all unsaved files before you perform the following functional test.*

3. To test the backup function, you may unplug the power cord of the UPS. During this test, observe that your equipment operates properly and without interruption. If you leave your UPS on continuously, it is a good idea to perform a backup function test at least once a month.
4. If you unplug the power cord, all models will beep once every 4 seconds and the Battery Mode LED will light. You can press the Test/Silence Button to silence the alarm. Plug the power cord back in after a few seconds.

3.7 Storage Instructions

For extended storage in moderate climates, the battery should be charged for 12 hours every 3 months. Repeat it every 2 months in high temperature locations. Plug in the power cord to charge the battery.

4. SPECIFICATIONS

4.1 Electrical Specifications

Product Name	Frequency (Hz)	Voltage (V)	Capacity VA / W
VS375C	50/60	100 / 110 / 120	375VA / 225W
		220 / 230 / 240	
VS575C	50/60	100 / 110 / 120	575VA / 345W
		220 / 230 / 240	

Input/Output Voltage

AC Line Voltage		
Version	Lower Limit	Upper Limit
100 / 110 / 120V	85/ 94/ 102V	120 / 134 / 138V
220 / 230 / 240V	165/ 184/ 192V	275 / 276 / 276V

Input/Output Frequency Range

Input	50 Hz / 60 Hz \pm 10%
Output (Inverter mode)	50 Hz / 60 Hz \pm 0.3 Hz

Wave Form :

AC Mode	Sine wave
Back-Up Mode	Step wave

Transfer Time:

Power failure AC \Rightarrow inverter	4 ms (typical)
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Spike/Surge Protection:

Version	Continuous Voltage Vrms	Single pulse 8/20us	
		I _{max}	Joules
100/110/120	175V	6500A	1050
220/230/240	300V	6500A	1050

Data-Line Surge Suppression:

Telephone Line Surge Protection	+/- 6KV Peak (1.2 μ S/50 Waveform)
10/100 Base-T Protection Let Through Rating	<1% (From 6KV/125A Normal Mode Surge)



Audible Alarm:

Battery discharge at power failure	Beep every 4 seconds
Battery approaches final discharge	Beep every second
Overload	Continuous buzzer

4.2 Mechanical Specifications:

Product Name	Dimensions W × D × H (mm)	Weight (Kg)	
		Net	Gross
VS375C	200*77*175	2.2	2.9
VS575C	200*77*175	2.3	3.0

4.3 Environmental Specifications:

	Operating	Storage and Shipment
Temperature	0 ~ 40°C (32° ~ 104°F)	-20° ~ +60°C (-4° ~ +140°F)
Humidity	5 ~ 90% (non-condensing)	5 ~ 90% (non-condensing)
Altitude	3,000 m (10,000 ft) (Max.)	12,000 m (40,000 ft) (Max.)

5. TROUBLESHOOTING

If the UPS fails to operate properly, please review the following steps before calling the repair center:

1. Is the UPS plugged into a proper working outlet?
2. Is the line voltage within the rating specified?
3. Does the circuit breaker on the rear panel need to be reset?

5.1 Troubleshooting Chart

Problem	Possible Cause	Corrective Action
UPS can not turn on and has no alarm.	UPS front panel on/off switch has not been pressed	Press the On/Off switch for two seconds
	Load less than 20W at battery mode	Normal condition, "No load shutdown function" is active
	Battery voltage less than 10V	Recharge the UPS for at least 6 hours
	PCB failure	Contact dealer or OPTI-UPS service
Battery LED (<i>amber</i>) is lit and UPS beeps every 4 seconds	Very low or very high line voltage.	Normal condition
	UPS input power cord is not plugged in	Plug in input power cord
	AC Fuse burned out	Replace the AC fuse
The UPS Overload LED (<i>red</i>) is always lit & there is a continuous sounding alarm	UPS is overloaded	Remove the least critical devices from the load
The UPS Battery Weak LED (<i>red</i>) is always lit	Battery voltage too low Dead battery	Recharge the battery and reset
Backup time is less than the rating	Battery is not fully charged or battery is dead	Plug the UPS into an AC outlet and recharge the battery for 6 hours. If problem remains, replace the battery
UPS appears to be functioning normally but the computer won't turn on	Computer input power cord is loose or not connected	Check the computer input power cord
Software communication not working	Wrong interface cable	Purchase the correct one from your distributor

6. USER REPLACEABLE BATTERY

The Batteries inside your UPS should last from between 3 to 5 years. If you suspect that the batteries are weak, allow the UPS to charge the batteries for at least six hours and then test the backup time. If the UPS still does not provide adequate backup time, follow the procedures below to replace the batteries. Please read section 6.1 before performing the procedure in sections 6.2.

6.1 *Warning*

Servicing of batteries should always be performed or supervised by personnel knowledgeable of batteries and required precautions. Please read the following cautions before replacing the batteries. Keep unknowledgeable (i.e., unauthorized) personnel away from the batteries.

CAUTION: Except for the battery, the unit contains no user serviceable parts. Repairs should be performed only by factory trained service personnel.

CAUTION: A battery can present a risk of electrical shock and high short-circuit current. The following precautions should be observed when working on batteries:

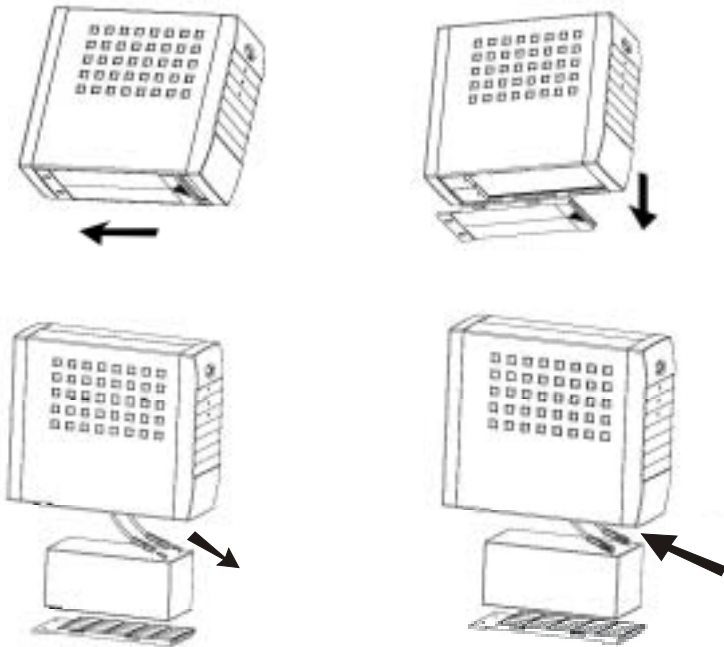
- (1) Remove watches, rings, or other metal objects.
- (2) Use tools with insulated handles.

CAUTION: Do not dispose of batteries in a fire. The batteries may explode.

CAUTION: Do not open or mutilate batteries. They contain an electrolyte which is toxic and harmful to the skin and eyes.

CAUTION: When replacing batteries, use the same number and the following type batteries: sealed Lead-Acid Maintenance Free (VS375C: 1x 12V3.5AH; VS575C: 1 x 12V/3.8AH)

6.2 Battery Replacement Procedure for VS375C/ VS575C



Changing the batteries in your UPS is a safe and easy procedure. Since the battery is isolated from the AC input you may leave your UPS and computer or other equipment on during the following procedure. Please note that if you choose to leave the UPS on when the battery is removed, it will not be able to power your equipment if a power failure occurs. Please read the cautions in section 6.1 before performing the following steps.

1. Remove the two small screws from the side of the UPS plastic case.
2. Gently slide the battery plate off.
3. Gently pull out the battery.
4. Disconnect the two wires connecting the battery to the UPS.
5. Connect the wires to the new battery, making sure that the red wire is connected to the red battery terminal and the black wire is connected to the black battery terminal.
6. Push the new battery into place.
7. Reposition the battery retaining plate.
8. Tighten the two small screws on the bottom of the UPS plastic case.

Fuse Replacement Procedure

1. Use a slotted screwdriver to take out the fuse socket.
2. Take out the broken fuse from the fuse socket.
3. Throw away the broken fuse.
4. Use the slotted screwdriver to push out the spare fuse.
5. Put the spare fuse into the fuse socket.
6. Push the fuse socket into the AC input socket.